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(54) **LAUGH DETECTOR AND SYSTEM AND METHOD FOR TRACKING AN EMOTIONAL RESPONSE TO A MEDIA PRESENTATION**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,984,880 A		11/1999	Lander et al.
6,001,065 A	*	12/1999	DeVito 600/544
6,904,408 B1	*	6/2005	McCarthy et al. 705/2
7,120,880 B1	*	10/2006	Dryer et al. 715/863
7,246,081 B2	*	7/2007	Hill 705/10
2002/0196342 A1		12/2002	Walker et al.
2003/0167908 A1		9/2003	Nishitani et al.
2004/0117814 A1		6/2004	Roye

2006/0143647 A1		6/2006	Bill
2006/0293921 A1		12/2006	Mcarthly et al.
2007/0016476 A1	*	1/2007	Hoffberg et al. 705/14
2007/0150916 A1		6/2007	Begole et al.
2008/0169930 A1		7/2008	Mallinson

OTHER PUBLICATIONS

PCT "Notification of Transmittal of the international Search Report and the Written Opinion of the International Searching Authority or the Declaration" issued in corresponding PCT Application No. PCT/US2008/050525 dated Jul. 8, 2008; 2 pages (86392PC).

(Continued)

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(57) **ABSTRACT**

Information in the form of emotional responses to a media presentation may be passively collected, for example by a microphone and/or a camera. This information may be tied to metadata at a time reference level in the media presentation and used to examine the content of the media presentation to assess a quality of, or user emotional response to, the content and/or to project the information onto a demographic. Passive collection of emotional responses may be used to add emotion as an element of speech or facial expression detection, to make use of such information, for example to judge the quality of content or to judge the nature of various individuals for future content that is to be provided to them or to those similarly situated demographically. Thus, the invention asks and answers such questions as: What makes people happy? What makes them laugh? What do they find interesting? Boring? Exciting?

29 Claims, 5 Drawing Sheets